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Edited by JOHN BARTLETT.

WEIGHTS AND MEASURES.

THE metric system of weights and measures, legalized in the United States as long ago as 1866, is coming more and more into use, particularly by students of the natural sciences. Readers of the photographic journals, too, are frequently met by formulæ given in grammes and cubic centimetres, instead of in ounces, grains, and drachms.

Now, from the strictly utilitarian point of view, it would be desirable for the entire civilized world to possess an uniform system of weights and measures, and a coinage or money system likewise uniform in character. Indeed some of our acquaintance who are very optimistic in their views of life and of things generally, claim that considerable progress towards the unification of weights and measures has been effected by the introduction of the metric or decimal system. We, however, while granting that something had been accomplished, should certainly join issue with them, and deny that the metric system had taken such a very strong hold upon those practical members of the community who are employed in the various industrial arts,—such as, for instance, photographers. For continental Europe the statement that the decimal system was in universal use would be correct; but for Great Britain and its numerous colonies, and for the immense area of the United States, it would be quite the contrary.

It is not to be wondered at that the change from the well-known standards of weighing and measuring progresses but slowly. It is doubtless true that the metric system with its convenient decimals is much better adapted for weighing and measuring than our system is, and also that it is more logical. This would, of course be strongly urged by any one who had been brought up to use the metric system just as we have been to our own. The advantages of having all the quantities divisible by or multiples of ten, would be enlarged upon, at the expense of our own arbitrary system of grains, scruples, drachms, ounces, pounds, and tons. But the advocates of our own system could make out a pretty strong case in arguing in its behalf. For instance, the fact that the standard of the metric liquid measure or cubic centimetre has the standard weight of one gramme is precisely paralleled by our own standard of the minim, which weighs one grain—distilled water being taken as the representative fluid, and the proper barometric and thermometric conditions observed. For the handling of larger quantities of material the metric system might be more conven-

ient, the cubic centimetre being fifteen times the bulk of the minim, but it would not be more accurate. The exact correspondence of the solid and liquid drachms in our own system is also quite as accurate as need be, so that for all practical purposes no fault is to be found with it. In the few instances occurring in photographic practice and in other industrial arts where a formula or recipe had to be very exactly compounded by weight only, and not by the usual method which combines the weight of a given solid with a volume of a given liquid, it would be far easier to counterpoise the bottle on the pan of the scales, and weigh the fluid, than it would be to substitute another set of weights and measures, or, worse yet, attempt to reduce the formula into the terms of another system.

To our minds, the defect of our present system is simply the fact that it consists of a number of separate systems, each of which is quite good in its own way and possesses advantages peculiar to itself. It would lead us too far to detail the reasons why metallic silver, being a noble metal, is bought and sold by Troy weight, while the nitrate, as every photographer knows, is handled by avoirdupois. We hope, and confidently believe, that the days are long past and gone when the purchaser of an ounce bottle of nitrate of silver would imagine himself cheated because the ounce consisted of four hundred and thirty-seven and a half grains, instead of four hundred and eighty. A devotee of the metric system might perhaps adduce this very fact as a great defect in ours, but we could survive the accusation.

It is a very difficult matter to absolutely say which is the more rational and the easier of two methods of dividing and multiplying weights and measures. To divide a substance into two parts so that the halves are equal, is fair and easy, as is also the doubling of the same. The division or multiplication by ten is perhaps easier, save for the troublesome Greek prefixes which have to be remembered in connection with quantities greater or less than the standard.

Those who have ever made a serious attempt to work by the new system of weights and measures have experienced the unpleasant feeling that they were more or less uncertain in those rapid calculations which are so easy by the older and more familiar method. Nothing can be easier than to weigh out so many grammes of any solid substance and dissolve them in so many cubic centimetres of a given menstruum, and the solution so made will work quite as well as if grains and ounces had been employed. But when the one system has been thoroughly learned and practiced by actually weighing and handling the substances, it will be found that the change to another system is awkward and demands the closest attention. The fingers may indeed be busied with the new weights and measures, but the brain will not adapt itself so easily, and will be constantly recurring to the familiar expressions.

We once asked a lady, who had been in France long enough to be well familiarized with the customs of the country, what her idea was of the metre when buying dress silks, and we immediately received the answer we expected, which was that she could not conceive of the metre as a quantity in itself, but as a compound quantity, so to speak, consisting of a yard or thirty-six inches, with an addition of three inches besides.

In like manner, to all of us who have been brought up to use the American system, the terms pound, ounce, and drachm convey a distinct idea, while the terms

of any other system do not. Even when well acquainted with the new method, the mental attempt will involuntarily be made to reduce the quantities dealt with to their equivalents in the more familiar style, so that instead of conceiving of two grammes as two grammes, it will always be thought of as thirty grains.

We are not in the least desirous that anything that we have said should be construed into an attack upon the metric or decimal system. The clear and scientific conception of the metric system ranks high among the efforts of human ingenuity. A great deal of useful and entertaining information will be obtained by a perusal of its history. The accuracy of calculation and patience required may be well imagined when we remember that the standard metre is the ten millionth portion of a quarter of the terrestrial meridian, or in other words of an imaginary arc extending from the equator to the pole; and that the litre or unit of capacity is the cube of one-tenth of the metre. Any good encyclopedia will give explanations of the metric system in full, while more condensed accounts will be found in works on pharmacy and the *materia medica*. But those who like to combine amusement with instruction will learn a good deal about the new system, and be greatly entertained at the same time, by reading Jules Verne's novel called "Meridiana," which describes an imaginary trip to the sandy deserts of Africa, undertaken for the purpose of obtaining accurate measurements of the terrestrial meridian. Few books are better suited to while away a winter's evening in an instructive and agreeable manner.

ELLERSLIE WALLACE.

LOCAL INTENSIFICATION AND REDUCTION.

THE question of local intensification or reduction of certain portions of a negative has always been a problem which at some time or other has confronted the professional as well as the amateur photographer. Many are the suggestions which have at various times been set forth, to overcome the local difficulty; most all, however, without proving of practical value in the hands of the amateur with average experience, no matter how successful the process might be in the hands of the experienced operator who promulgated the formula. Most amateurs who have occasion to experiment with either intensification or reduction of negatives, as a rule generally conclude that the suggestion "to get the time right and then develop properly," is the best and safest plan to obtain plates of the proper density.

Cases often arise, however, with old and experienced operators, where a local check in the development of a plate would prove of the greatest service if it could be done.

This subject, as well as the local applications first mentioned, have, of late, attracted much attention in photographic circles in Europe, and culminated in an exhaustive paper, which was read before the "Society of Photographic Co-Laborers" in Vienna, by Herr Hans Lenhard, instructor in the Imperial Lehr- and Versuchsanstalt.

In connection with this subject, the January number of the *Photographische Rundschau* of Vienna, publishes an interesting communication from a correspondent, Herr Anton Einsle, giving the results of over two years successful practice and experiment.

The process of a local check during development looks so simple and practicable that almost any one with average experience in photography should be able to reach the desired results. The two other formulas described in the article we would hardly advise the amateur to experiment with, unless it were with some valueless negatives. The writer in the *Rundschau* states that cases occasionally occur even in well-timed pictures,—resulting from cloud masses, roofs, large masses of rock, or some glaring white subject prominent in the foreground, or the sky in a landscape, while in interiors, halation from any cause, or some white object prominently located in the room, such as a white marble mantelpiece, etc.,—where it would be desirable to locally check the development of the negative, so as to prevent too great density in certain parts of the picture, which would make the negative valueless. To overcome the difficulty and recover the negative, where it is suspected that local retardation is necessary, the plate is placed in the tray and the developer (immaterial what kind) is then poured over the plate in the usual manner; when the high lights come up plainly, the plate is taken out of the tray, and well washed under the tap or well rinsed off in clean soft water; it is then placed in an ordinary negative rack, and left there from five to eight minutes until it is thoroughly drained; the film now shows a matt gloss, somewhat similar to an orthochromatic plate before it is developed. The negative, after being drained, is laid on a convenient shelf or table, and such parts as would become too dense with continued development, are treated with a saturated solution of bromide of potassium; this is applied with a soft camel's hair pencil; after letting this solution act upon the film for two or three minutes, the plate is again well washed, after which the development may be continued to the desired point. The result, if intelligently done, will be a soft, harmonious negative, of good printing quality.

Local or partial reduction. Negatives (no matter how long they may have been developed), if they are too dense in certain places, are to be laid in clear, soft water for about five minutes, until the film is uniformly wet, then remove the superfluous moisture with a piece of filtering paper, then place the plate in an ordinary printing or retouching frame so as to lie perfectly level, and so the light will show through the negative, then moisten the parts to be reduced with the ordinary hypo fixing solution (1 : 4); this is also done with a soft brush pencil. After which carefully drop on more hypo, using a pipette or medicine dropper for the purpose, until the hypo stands all over the space to be reduced; then drop a single drop of concentrated solution of red prussiate of potash in the hypo on the plate. This will immediately assimilate with the hypo and reduce the space evenly and rapidly. As soon as the desired degree of reduction is attained the plate is quickly immersed in a tray of water. Any person trying this experiment must bear in mind (1), that the first painting with the hypo must be carefully done; (2), after the hypo is dropped on the slightest shaking will cause it to overrun its bounds; (3), that the red prussiate of potash is a strong poison; (4), not to experiment at first with a valuable negative.

In local or partial intensification, the preliminary proceeding is similar to the former one. After the surplus moisture is removed, the parts to be intensified are first painted with a saturated solution of bi-chloride of mercury, then more is carefully added with the dropper, care being taken that it does not overrun the bounds, and given time until the parts become a grayish white color; the plate is then well washed and

dipped in a tray of either ammonia and water, or a solution of sulphite of soda. In either case the portions acted on by the mercury become a dark brown or black. The same remarks in regard to the former process apply to this one.

Herr Einsle, in the *Rundschau*, promises in the near future to furnish additional information on the subject, which we shall lay before the readers of the JOURNAL as soon as it comes to hand.

J. F. S.

THE SILVER PRINTING BATH.

Read before the Photographic Society of Philadelphia.

IN the sensitizing of paper for the purposes of photographic printing, the exciting or sensitizing bath is one of the most important features of the process, hence a few notes concerning its preparation and preservation may not be out of place.

The usual method of making paper of any kind sensitive to the action of light is, after having previously impregnated it (or "salted" it, as it is termed) with an alkaline chloride, to float it for a varying length of time on a solution of silver nitrate. This solution is called the silver "bath," and consists of silver nitrate dissolved in water, with or without the addition of other substances, the strength of the solution varying from 35 to 60 or 70 grains of the nitrate to the ounce. The precise strength necessary to produce the best results depends upon the amount of chloride used in salting the paper, but for the several brands of paper now found in the market, both plain and albumenized, a strength of 50 grains of silver nitrate to the fluid ounce of water will be found to be a safe average.

Silver baths may be divided according to their composition into three classes.

The first class comprises such formulæ as direct the use of only the silver nitrate and water. A bath made according to this plan, and containing from 50 to 60 grains of silver nitrate to the ounce, is used at the present time by a large number of professional photographers, and is capable of producing excellent results. It is not apt to discolor with use, and by occasional purification, as afterwards to be described, will last for a long time. It should be kept slightly alkaline in reaction, as the presence of free acid would be apt to act injuriously on the paper. This can be done by the occasional addition of a few drops of ammonia, or, still better, of a small quantity of a strong solution of sodic carbonate. The resulting precipitate of silver carbonate soon settles to the bottom of the vessel, and tends to keep the bath clear by carrying down with it any floating organic matter.

The second class is represented by the old ammonio-nitrate bath. This was formerly in great favor among photographers, and, although to a large extent superseded, still has some great advantages, particularly when used in the preparation of silver prints on plain paper. It is prepared as follows: The silver nitrate is first dissolved in the proper quantity of water; two-thirds of this solution are then placed in a separate vessel, and strong ammonia added, drop by drop, until the precipitate of oxide of silver at first formed is completely dissolved; the remaining third of the solution is now added, and as this causes a slight precipitate again, pure concentrated nitric acid is added cautiously, drop by drop, until this precipitate is just re-dissolved.

Although increasing the sensitiveness of the paper and deepening the intensity of the prints, this bath is apt to more easily discolor with use than the previous bath, owing to the separation of free organic matter and albumen from the paper. For prints on plain paper, however, it is particularly adapted, and will give results not equaled by any other method, the prints having a rich velvety appearance. Paper sensitized on this bath does not need to be fumed.

The third class comprises baths which, in addition to the silver nitrate, contain also an alkaline nitrate, such as the ammonium, sodium, or potassium salts. These salts act as absorbents of free chlorine, and also serve to prevent the paper from becoming excessively dry in hot weather. The following formula may serve as a type.

Silver nitrate	60 grs.
Ammonium, or sodium nitrate,	60 grs.
Water	1 oz.

Render slightly alkaline with carbonate soda, or with ammonia. A few grains alum are also sometimes added for the purpose of preventing blisters. This bath gives excellent results with albumen paper, and for this purpose is probably to be preferred to either of the preceding formulæ. For plain silver prints it is much inferior to the ammonio-nitrate bath, and the prints seem to lose considerable strength during the preliminary washings before toning. Paper sensitized in this bath also requires to be fumed before printing.

In sensitizing albumen paper in these different baths, the paper should always be "floated," as it is termed, an operation sufficiently familiar to all photographers to require no description. Plain paper may be either "floated," or the paper may be laid flat on a clean sheet of glass, and the sensitizing solution applied to the *salted* side by means of a clean swab of cotton flannel, or a camel's-hair brush.

It may be remarked here that paper sensitized in either a bath of the first or the third class should always be fumed; with those of the second class it is not necessary. In printing, also, the sensitized paper from the former must be printed much more deeply, as they seem to lose a great deal of intensity in the subsequent washings. In the preparation of plain silver prints with the ammonio-nitrate bath, the writer has found such a small percentage of silver in the wash waters that but a slight reaction would be given to the ordinary tests of silver, thus showing that nearly all of the silver salt remained fixed in the paper, and consequently tended to deepen and intensify the print.

Having now briefly discussed the different forms of the silver sensitizing bath, it remains to say a few words regarding its care and preparation. First, as every sheet of paper sensitized robs the bath of so much silver, its loss must be made good, or in a short time the bath will cease to work properly. The bath must therefore be strengthened from time to time, and this is generally done after each day's work by adding an amount of fresh nitrate of silver corresponding to the quantity abstracted from the bath, thus maintaining it of a uniform strength. The usual practice is to allow about fifty grains of silver nitrate for each sheet of paper sensitized, and if the amount of silver corresponding to the number of sheets used is dissolved in a few drachms of water and added to the bath, and then the bath exposed to the light for a while, it will continue to work satisfactorily for a long time. The hydrometer is also used for determining the strength of the bath, it sinking to certain marks cor-

responding to the number of grains of silver nitrate in each ounce of the solution. This answers very well for a solution of silver nitrate in pure water, but as the bath soon becomes contaminated with soluble salts and organic matter, the density of the solution increases, and the readings of the hydrometer in consequence soon become incorrect. The chief source of contamination to the bath is from organic impurities carried into it from the paper, in time causing a brownish or reddish discoloration of the solution. This must be removed, since paper floated on such a bath is unevenly sensitized and darkened. Several methods of purification have been proposed. One is to add a small quantity of kaolin to the bath, which is then well shaken up and allowed to stand in the sun. The organic matter is carried down by the kaolin as it subsides, and, after filtration, the bath is again ready for use. Another method is to add a small quantity of a strong solution of potassium permanganate to the discolored bath, and decompose the organic matter by its oxidizing properties. This is immediate in its action, and quite effective, but is open to the objection of introducing extraneous salts into the bath. Another plan is to add a few drops of hydrochloric acid, or still better a small pinch of salt, and the chloride of silver thus formed, in settling to the bottom of the vessel, carries all impurities with it. The best method, however, is to add a small quantity of a saturated solution of sodium carbonate, and then set the bottle containing the bath in strong sunlight. The action of the sunlight oxidizes the organic matter, and the carbonate of silver formed carries it down as it settles to the bottom of the bottle.

Should it, however, be found impossible to purify the bath by this means, the next resource is to the process of "boiling down," as it is termed. A porcelain capsule, or still better an enameled iron dish of convenient size, having been procured, the refractory bath is poured into it, and then placed over a gas stove and gently boiled down to dryness. The heat is then increased until the contents of the dish are in a state of fusion and completely liquefied. The heat is continued for a short time until all organic matter has been thoroughly carbonized, and then stopped, and the dish and its contents allowed to cool, the latter dissolved in distilled water and filtered. The filtrate is then made up to the original measure of the bath with distilled water, and a drachm or two of fresh silver nitrate added to make up for waste and loss.

It happens, however, in course of time that the silver bath becomes so clogged up with soluble salts, such as the ammonium, sodium and potassium chloride and nitrate, resulting from the chemical reactions occurring during sensitizing, that the bath will no longer work. It must, therefore, be set aside, a new bath prepared, and the silver recovered from the old bath.

If the bath has been made according to the first or third class, all that needs to be done is to render the bath acid with nitric acid, and then add a strong solution of washing soda until the white precipitate of carbonate of silver ceases to be formed. This is allowed to settle, the supernatant liquid poured off, and the precipitate washed repeatedly until the washings are free from color, and all soluble salts have been removed. The precipitate is then drained on a filter, and the moist mass, filter and all, is placed in a dish of porcelain or enameled iron, and dilute nitric acid (1-10 of water) added until effervescence ceases, and the white precipitate is nearly entirely dissolved. This solution is then filtered and evaporated, first to dryness, and then heated to calm fusion, and allowed to cool. The resulting semi-crystalline mass may be con-

sidered a pure silver nitrate, and when weighed will indicate what amount of water is to be added to form a bath of the proper strength.

If the old silver bath, however, is prepared according to the ammonio-nitrate formula this method will not answer, as in the presence of the ammonia salt not all the carbonate silver can be precipitated. The best plan is, therefore, to acidify the bath as before with nitric acid, and then add salt until all the silver is precipitated as chloride. This should be well washed, collected on a filter and dried. It may then be converted into pure metallic silver by fusing it in a crucible with powdered charcoal and nitrate of potassium, or it may be placed in a vessel containing dilute sulphuric acid (1-20 or 1-30 of water) and metallic zinc added. Metallic silver will be precipitated in a very finely divided state and the zinc dissolved. From this silver the nitrate can be prepared by dissolving it in dilute nitric acid and then proceeding in the same manner as described for the carbonate of silver.

CHARLES L. MITCHELL, M.D.

GENERAL NOTES.

WE have been favored with a "Souvenir of Photo-Art-Printing for 1890," issued by Mr. Fdk. Gutekunst, of 712 Arch St., Philadelphia, which well illustrates the great strides made in America towards perfection in the photo-mechanical art. The souvenir contains twelve plates in an illuminated cover,—each plate being an artistic gem in the special department which it is designed to illustrate; for chasteness and beauty, as well as mechanical execution, we have never seen this collection of prints surpassed in this country; the tones and colors being equal to the best Parisian specimens which have come to our notice.

For the benefit of our readers we will describe the plates in detail. The covers are of a soft-tinted, embossed paper. In the centre a white medallion five inches in diameter contains an exquisite bird effect,—one a sea-gull in the act of descending, with fine cloud and water effects; on the rear cover a chirping blackbird, with sprays of grain and flowers as reliefs.

The main title, in black, beside the name of publisher and address, shows medallions of marine, mechanical, art, architectural, and landscape effects, while in the upper corner appear the well-known portraits of ex-presidents Grant and Cleveland.

In the next plate we have a group of Pennsylvania Railroad scenes; the chief views, Sentinel Rock, Susquehanna Bridge, Roaring Spring, and the well-known Horse-Shoe Curve, are all printed in sepia, and form a pleasing contrast to a view of New York Harbor in a dark French blue. In the centre, within a keystone, we have Broad Street Station in an Indian red tint, while two ovals on either side show the Iron Spring, Cresson, and Bedford Springs in a rich green, while a panel at each corner with railroad scenes printed in a soft gray completes the well-blended picture.

The next plate, a fine European view printed in a dark green tint, shows a castle in strong relief against a wooded hill, with a purling stream in the foreground.

Plate III.—An architectural study, in a warm shade of brown, of a modern shingled cottage residence standing on an elevation.

Plate IV. is an Alpine scene, with glacier and snow-effects. The tint is a very dark blue, and the result exceptionally fine.

Plate V.—In contrast to above we have a West India scene,—a study in sepia,—from a drawing by F. W. Taylor.

VI.—A photogravure of a painting of the Dutch school,—a picture of contentment,—showing an old burgher with his paper, pipe, and mug of beer.

The next plate, three specimen portraits from the gallery of Mr. Gutekunst, Walt. Whitman, P. T. Barnum, and J. H. Heverin, well illustrates the superscription from Jefford: "Countless the various specimens of mankind."

The next plate, a large portrait of the late Thomas U. Walter, the architect of the Capitol at Washington, is another specimen of the publisher's art photography.

A group of happy school children, evidently an instantaneous effect in a street in Philadelphia, forms the next gem.

A portrait of a child, in black, with a sprig of moss roses and lilies of the valley in colors, completes the souvenir.

It is seldom that a publication of this kind is gotten up with such refined elegance. We hope to be able to present the readers of the JOURNAL with a specimen illustration during the current year.

Mention is made, in the article on local intensification in the present number of the JOURNAL, of the "Imperial Lehr- and Versuchsanstalt," in Vienna. For the benefit of our readers we will state that this institution, established under the sanction of the Imperial Government of Austria, gives instruction in practical photography in all of its branches. Special attention is given to the process of reproducing old engravings and paintings. We understand that some excellent results in this department have been reached by the students of the institution, a noteworthy example being a series of copies of "Holbein's Dance of Death," fifty-three in number, the work of Herr Anton Einsle. Another feature of the above institution is the practical instruction in all kinds and processes of contact printing,—photolithography, zinc etching (zincography),—but more particularly heliogravure, or, as it is known in this country, the photo- or collotype process, which, on account of the beautiful results attained, has induced many of the leading amateurs of Vienna to enter for a course of instruction, it opening a rich field to many enthusiastic amateurs who have more means and time for photographic experiment than the average professional.

J. F. S.

A METHOD of photo-engraving direct on wood is announced from Russia. The wood is boiled in a solution of sulphate of copper, and afterwards in a solution of carbonate of soda, which fills the pores with insoluble carbonate of copper. The block is then dried, its face brightly polished, and the sides and back coated with asphalt varnish. The face is coated with bichromated gelatine, and after printing is developed with warm water, as in the carbon process. A coat of asphalt varnish, carefully applied, adheres only to the portions from which the gelatine has not been removed. The block thus protected with varnish is placed for an hour in strong nitric acid, and then for an hour in strong sulphuric acid. When taken from the

acid the unprotected parts of the wood will be found to be eaten away, and the block may be cleaned by rubbing with a hard brush. The varnish on the face is removed by soaking in benzine, and the block is at once ready to print from.

IN the current number of the *Photographische Notizen*, edited by Dr. H. W. Vogel, we find a notice of a new attachment to the tripod, the invention of E. Leutner. It is for the purpose of setting the camera level and plumb in all situations without the trouble of lengthening or shortening the different legs of the tripod, by which much valuable time is often lost to the operator. If this invention is practicable, which we have no doubt of after Dr. Vogel's endorsement, it will be hailed with delight by all amateurs. Our notice states that it is made in two forms—one for tripods with a loose metal triangle, the other where the top is stationary or of wood.

S.

THE RESEMBLANCE OF MARRIED COUPLES.—It has long been accepted as a fact that married couples, who are not only exposed to the same conditions of life, but the influence of whose minds must necessarily react upon each other, assume more or less facial resemblance to each other. The Photographic Society of Geneva, Switzerland, with a view to determining this question, have made photographs of seventy-eight young couples. The result is that in twenty-four cases the resemblance in the appearance of the husband and wife was greater than that of brother and sister; in thirty cases it was equally great, and in only twenty-four was there a total absence of resemblance.—*New York Commercial Advertiser*.

CINCINNATI MUSEUM ASSOCIATION ART ACADEMY.—Dr. A. Le Boutillier gave a lecture on "The Value of Photography in Modern Art," illustrated with Stereopticon views, in the lecture room of the Art Academy, Eden Park, Saturday evening February 1st, 1890.

Cincinnati Museum Association Art Academy announce a special course in etching and photography, to begin February 17th, 1890, at the Art Academy, Eden Park. These classes are open to all students of the Academy, and others who may wish to enter.

A. T. GOSHORN, Director.

LYNN CAMERA CLUB dedicated its new rooms, January 23, 1890, at 42 Broad street, Lynn, Mass. On the first floor is the banquet hall; in this Prof. Elihu Thomson made a fine display of photographs made on his last summer's trip to the Paris Exhibition. In the large drawing-room on the second floor there was a large exhibition of prints. Several gentlemen exhibited a number of fine views, as follows: Mr. Batcheller, views of the recent great fire in Lynn; Mr. Darcy, mountain and Lake George scenes; Mr. Bramhall, landscape in Madeira; Dr. Williams, California views; Mr. Russell, yachting scapes; one point in particular deserving mention was a view of the flag-ship *Chicago* as she lay in Boston harbor, showing plainly the smoke from the Lynn fire in the distance. Miss Appleton, a lady member, had a grand

display of work done while on a tour the past summer. An interesting feature is a neatly and convenient dark-room for the use of the members. We understand the whole establishment is one of the finest fitted up photographic club rooms in the country. We wish the club a long and prosperous career. One feature we heartily approve of,—the admitting of ladies as members, and on equal terms with their brethren,—which may well make some of our older photo societies blush with shame.

THE annual reception of the American Water Color Society was given to-night at the National Academy of Design. This was preceded by a press view of its twenty-third annual exhibition, which will be opened to the public on Monday. There are 645 water color pictures exhibited. Nearly all of them are well hung, and, as a whole, they are a feast to the eye. Among the exhibitors are E. A. Abbey, who presents a landscape with figures; W. T. Smedley, who shows three pieces; W. H. Gibson, who exhibits as many as thirteen small studies of out-door scenes; Walter Shirlaw, T. de Thulstrup, Bruce Crane, Percy Moran, Charles M. Dewey, S. R. Wills and F. S. Church. The general impression made by the whole collection is an unusually pleasant one. The number of pictures which, like Abbey's, challenge the attention, is not many, but there is in nearly all a quiet beauty which is at once restful and pleasing, and which gives a charming general effect to the exhibition.

THE art illustration in the *Photographische Rundschau* for January is exceptionally fine—"Brechtsgaden," an Alpine scene from negatives by Fomm, the printing by Obernetter of Munich. The gradual shading of the deep shadows of the foliage in the centre of the picture to the light gray tint of the atmosphere, with the high lights in the foreground, shows a richness of tones rarely seen in a photograph.

THE advent of a daily illustrated newspaper is an event that may at first sight appear to have but little connection with photography; and yet it is unquestionably true that but for photography and the automatic processes of engraving which photography has inaugurated, a daily newspaper giving illustrations of the events of the day would remain an absolute impossibility.—*The Camera*.

THE question whether a photographer who takes views or portraits at a place distant from his regular residence is subject to local license laws, or to tax as a peddler or traveling salesman, is causing much discussion on the continent at the present time, and has called forth numerous opinions pro and con in the public prints. The accepted conclusion (*Photo-Zeitung*, No. 51) seems to be that where a photographer receives an order to come to a certain place or town to take the pictures, either landscape or portrait, and afterward delivers them, he is not liable to the law. Should he, however, go to any place distant from his residence and practice his art in any manner, and there solicit orders, he would be liable to the local laws governing peddlers or other solicitors of trade.

S.

OUR well-known contemporary, the *British Journal of Photography*, has frequently done us the honor of reprinting from our columns, and we find our article on "Photographic Theorizing," which appeared in our December number, in full in the issue of January 10th. Had we been asked which of our articles would *not* have been acceptable to English readers, we should have mentioned this particular one, because we did some pretty plain speaking in it. The editor of the *British Journal* seems to think differently, however, and is evidently sure that the criticisms contained in our article were made in no unkindly spirit. We need hardly add that his opinion is quite correct.

A FEW days before the present number of the JOURNAL went to press, our editorial labors were very pleasantly interrupted by a visit from Mr. Charles R. Pancoast, an amateur of experience and culture. Mr. Pancoast became a member of the Photographic Society of Philadelphia as early as 1876, the year of the Centennial, and still continues his active interest in the organization, although no longer a resident of this city.

In the course of a lengthy chat with this gentleman, he mentioned some interesting matters. One of these, that will doubtless commend itself to those of our readers who desire to work economically, and yet make an agreeable variety, was the making of a depressed edge around the print on the mount. Etchings and similar pictures of the kind are often seen with this ornament, and it may be quite easily and neatly imitated on a paper mount; cardboard would hardly do, being too stiff. An office copying-press is the thing necessary, and the mount carrying the print is simply laid in proper position under the descending portion, with a card or metal shape having suitably rounded corners laid over it. A few turns of the screw at the top finishes the operation.

Simple as this seems, failures may still occur from carelessness in adjusting the shape over the print. If a number of prints were to be thus made, a duplicate form or shape could easily be cut in glass; this might be adjusted with great accuracy over the print, and the corners marked lightly with a lead pencil. The card or metal form now being substituted, the pressure would be applied as usual, and the pencil marks afterwards removed with bread-crumbs.

It should not be forgotten that if a rough-surfaced paper is employed, the portion pressed upon will be rendered considerably smoother.

ANOTHER and far less agreeable matter was spoken of by Mr. Pancoast. He told us of a crystalline deposit which had formed on the inside of the cover-glasses of lantern-slides, and in some cases on the outside of the slide itself. The slides had invariably been kept in a perfectly dry place, in wooden drawers made expressly for the purpose. We know Mr. Pancoast's neat manipulation well enough to be sure that this disagreeable phenomenon was owing to some circumstances over which he had no control. Another curious point in this matter is that the deposit showed a tendency to reappear even after remounting. The exact chemical composition of these crystals has not yet been ascertained, but the same complaint has reached us from a number of sources.

Further than advising general cleanliness to be observed in all the details of slide-making, we know of nothing to suggest at present by which the trouble may be avoided. Should any of our readers meet with this unpleasant experience, we invite them to communicate with us about it.

IN speaking of the uses of the larger sized plates as compared with smaller ones, Mr. Pancoast alluded to the great convenience of the "changing-box" for the smaller sizes. We are well aware that this useful piece of apparatus is not much in vogue in America, and we have always regretted the fact. For the benefit of those who have never seen the apparatus in question, we may briefly describe it as a grooved plate-box with a specially constructed plate-holder which slides on the top parallel with the grooves. The action of sliding on the holder automatically opens the slots covering the groove in which the sensitive plate rests, which latter is made to pass into the holder by simply turning the affair upside down, when the plate falls into the holder without any risk of exposure to light. After exposure in the camera, it is returned to the box in like manner.

The great advantage of the changing box compared to the ordinary double holders is the saving of weight and bulk. The reason why this elegant form of apparatus has not been more extensively used in this country is undoubtedly owing to the fact that commercial gelatine plates here do not run even in size. This of course interferes with the free passage of the plate in the grooves, and leads thoughtless persons to condemn the apparatus itself, when the fault really lies in the carelessness with which the glass is cut. We should be very glad to see the changing-box re-introduced, particularly as the original idea is due to an American.

IN referring to the article on "Stops," which appeared in our last number, Mr. Pancoast asked us the question whether our advice of removing the stop to a distance of one-fifth of the focal length anterior to the anterior surface of the single combination, when used alone, was intended to apply to such lenses as the Ross Portable Symmetrical. We at once replied that such lenses as this could hardly be expected to give good results when the combinations were separated. For instance, the seven inch Portable Symmetrical covers an $8\frac{1}{2} \times 6\frac{1}{2}$ inch plate, the diameter of the lens itself being rather less than five-eighths of an inch. If either combination were used alone, it is plain that the *full aperture* of the combination would represent F 28. This is in fact equal to quite a small stop; and as no definition of good quality could be expected without still further stopping down, the exposure would be greatly lengthened. It should always be borne in mind that the average photographic lens is not intended to be taken apart and its combinations used singly; and that such a manner of working is at best a mere makeshift. Certain proportions between diameter and focus, as well as between stops and focus, have been settled upon by opticians as the best. Our remarks in last month's article were intended to apply rather to lenses of larger diameter, such as portrait lenses, euryscopes, and perhaps rapid rectilinears. In lenses of "casket" pattern, great pains are taken to secure the proper position of the stop, special directions accompanying each lens.

OUR ILLUSTRATION.

THE charming little study from life which we present with this number of the JOURNAL will serve as an encouragement to our many lady amateurs. We can well remember the feeling of pleasure with which we, the older members of the calling, welcomed the first lady amateur photographer. We congratulate them on their success, and would be glad to have more of them with us. Mrs. Julia Cleveland, of this city, is the only American lady amateur to receive the "red letter" diploma of the *special seven* at the exhibition of the Philadelphia Photographic Society, held in April of last year. Mrs. Cleveland has chosen her little son for a subject, and has scored such a real success in the pose, arrangement of light and shadows, and general treatment of the subject as was not surpassed by any exhibited by professionals at the Exhibition. While looking at the little fellow's joyous and self-satisfied expression, one cannot but feel that "One touch of nature makes the whole world kin." There are others who perhaps might be inclined to say with the more phlegmatic, "We never cease wanting to be grown up, until we are grown up; then we never cease wanting to be young again." The picture exhibits a refinement and artistic beauty that irresistibly attracts one to more than a mere casual observation, whether it be by a novice or a photographic expert. It may be of interest to state that a Cramer 50 plate was used, with a full opening of a Beck lens, and McCollin & Co.'s pyro developer. The title has been well chosen by our lady artist, "I'M A BIG BOY NOW."

THE MODERN PHOTOGRAPH.

THERE are many funny fancies—
 Some are fit to make one laugh—
 But the oddest is the fashion
 Of the latest photograph;
 Formerly they took your picture
 Front face, eyes upon a crack,
 Now-a-days the proper caper
 Is to photograph your back.

FRANK B. WELCH in *Time*.

MISS JHUBB (Boston)—Have you ever delved into the esoteric mysteries of theosophy?

Miss Penn—No, I cannot say that I have.

Miss Jhubb—It is a beautiful philosophy. Your true theosophist is a being of infinite calm. Nothing disturbs the peaceful indifference of his pacific mind. Worry, anxiety, irritation, anger, are to him unknown. His is a state of perfect rest.

Miss Penn—Just like a dead man, isn't he?

CLOUDS IN LANTERN PICTURES.

NO one will deny that a lantern picture is often improved by the addition of clouds, and if these happily appear in the one negative so much the better. Sometimes clouds are so buried in the over-dense sky of the negative that it is a difficult matter to get at them. Sometimes local reduction may be advisable, and if the worker is afraid of doctoring his negative with chemicals, after he has looked upon it as finished and done with, he may with advantage adopt that mechanical mode of reduction which is possible by rubbing with old linen moistened with alcohol. (This method will, by the way, often unearth the details of a church window, which before had been lost in halation.) If, however, there are no clouds in the negative, and a large expanse of white is the printed result, we must adopt other means to remedy the defect, for defect it is. In the case of a snow scene, or, indeed, any picture where there are brilliant high lights, the sky can be toned after printing by exposing it to light, shielding the rest of the picture. It can even be done after partial development—the development finishing the landscape and toning the sky at the same time. But when actual clouds are requisite, a separate cloud negative must be used. The work is by no means so easy as it is in the case of a silver print on paper, for the reason that so much judgment is required during the exposure, first of the landscape, and then of the sky negative, the actual results not being apparent until development. Some advocate the printing of the sky on a separate plate, and then making that plate the cover-glass of the finished slide. But the difficulties are increased by such procedure, for the image of the clouds is reversed. I believe that the best plan to adopt is as follows: first of all select the sky negative for use, taking care that the clouds are lighted from the proper direction. (To make all safe, it is as well to make a trial silver print from the combined negatives, in order to see if one is really fitted to the other.) Next fix a 3-inch mask on the glass side of each negative, so that the lantern plate can readily be removed from one to the other, and will be in register for both. Measure the height of the horizontal line on the landscape negative, and if it be, say, an inch and a half from the bottom of the paper mask referred to, make a pencil mark at that height on the mask which is affixed to the cloud negative. Now give the necessary exposure to the landscape—preferably by gaslight, as then there is plenty of latitude, and then (by ruby light) remove the plate from its frame and place it in another frame on the cloud negative. Fasten it up securely, turn the frame over, and note the position of the pencil mark on the mask.

Now turn up the gas once more, and during exposure shield that portion of the plate below the pencil mark with a piece of card. Keep the card in motion well above the mark so as to get a graduated tint, and after due exposure turn down the gas and prepare for development.

Be sure to have at hand a ten per cent. solution of bromide with a camel's hair brush in it ready for use. It may not be wanted, but if it should be, it will be wanted badly. For instance, the sky may soon show that it has received more than sufficient exposure, while the landscape has not had enough and hangs back. In such a case, rinse the sky portion of the plate, and paint it over with the bromide solution; then redevelop.

But a little practice with this method of double-printing will render such dodges unnecessary, for the operator will soon acquire the habit of exposing his plates to suit the needs of both negatives. But when all is said and done, the best effect is to be obtained when the one negative is adorned with natural clouds. Very often in this climate clouds are more common than is desirable, especially as they generally hold a remarkable quantity of rain; but on the sunny days vouchsafed to us the clouds are welcome, from an artistic point of view, at any rate. In lately looking over a set of instantaneous seascapes, taken last autumn on the south coast, I was surprised to find that a cloudless sky was the exception rather than the rule. One more word. Do not lose the opportunity of securing cloud negatives, for they can be obtained on days when other photographic work is next to impossible. At the same time, make a note by compass of the direction in which the camera is pointed, and the hour at which the negative is taken. Similar notes regarding landscape negatives will enable the operator to wed any two without a sacrifice of truth. Thus, supposing, for the sake the illustration, we have a picture of Shakespeare's Cliff, taken at 5 P. M., in August, from the Admiralty Pier, of which it is due west. A westerly sky negative taken in the same month, at the same time, can be associated with it without hesitation.

The question of altitude of clouds need not trouble us if the camera is kept level, and the horizontal line made to register in both landscape and cloud negatives, as I have already pointed out.

Most instantaneous shutters are so constructed that they will give a much shorter exposure to the sky than to the landscape beneath, and if clouds be present they will be reproduced in the negative in a printable form. A shutter for the express purpose of producing pictures adorned with natural clouds was invented some time back by Mr. Leisk, and is sold, I believe, by Messrs. Marion. But I fancy that it was adapted more for seascape, where there is an unbroken horizontal line, than for more general work. In my own practice, when I am anxious to secure cloud effects I use a shutter which was designed and brought out about twenty-five years back by Mr. Dallmeyer, but which, like many other things, has been of late years revived and reintroduced, in a slightly altered and perhaps improved form. In its modern dress it is known as Place's shutter, and its chief merits lie in its simplicity, and in the control which the hand can exercise over it during exposure. It consists of a frame having two grooves, in each of which slides an ebonite plate. These plates are connected together by cords which run over a small roller at the top of the contrivance.

When an ebonite plate is down in front of the lens, the other is raised in its groove out of the way. By a string attached to this upper plate it is pulled down, and as it descends the other plate rises and the exposure is made. The duration of exposure, and the amount of extra time devoted to the exposure of the foreground, is therefore directly under the control of the hand which pulls the string. I have found it convenient to keep this shutter on my lens during the whole of a day's tramp with the camera, for, as will be evident, it is serviceable for any kind of subject which is likely to be met with, from that which requires a quick exposure, to the many seconds wanted when the camera is beneath the shade of thick foliage.

There is one thing to be guarded against in the use of separate cloud negatives, and that is the tendency to use them for every picture without consideration. In our exhibitions a large proportion of the works hung are often spoilt by being wedded with incongruous clouds, and many amateurs seem to think that if there is only a little patch of open sky it must have a bit of cloud pitchforked into it somehow. This is a mistake. In landscapes containing plenty of subject, and more especially in those in which there is a tracery of foliage against a large portion of the sky, the picture is the better for not being tampered with. A sunlit landscape photograph is very often spoilt by association with a dark, cloudy sky, through which in nature no sunlight could possibly penetrate. I may mention in concluding this portion of my work, that an excellent article on printing-in clouds in lantern slides, from the pen of Mr. Lyonel Clark, appeared in the October (1889) number of the *Photographic Quarterly*.—*The Amateur* (London) *Photographer*.

T. C. HEPWORTH, F.C.S.

TREASURER'S ACCOUNT OF THE P. A. of A.

G. M. CARLISLE, Treasurer, in account with the Photographic Association of America.

DR.

To cash on hand as per last report	\$2,895	73
Received from Theo. Endean after making report	\$20.00	2,915 73
Received from 238 new members at	5.00	1,190 00
Received from 306 members' dues at	2.00	612 00
Aug. 12. Received from O. P. Scott, for floor space		1,127 50
" " " " C. H. Codman & Co., for floor space		110 25
" " " " Public admission (1325)		331 25
" 23. " " Harvard Dry Plate Co., floor space		110 25
" " " " E. & H. T. Anthony & Co., floor space		141 75
Sept. 3. " " O. P. Scott, floor space		340 75
Nov. 15. " " Eastman Dry Plate Co., floor space		141 75
Dec. 23. " " O. P. Scott, floor space		247 25
" " " " O. P. Scott		264 40
" " " " 206 extra buttons sold at 25c.		51 49
" " " " interest to July, 1889		75 14
		<hr/>
		\$7,659 51

DISBURSEMENTS, 1889.

Jan. 19. Paid draft No. 1 J. M. Appleton, expense attending Executive Committee meeting	75	15
" " Paid draft No. 2 O. P. Scott, expense attending Executive Committee meeting	95	00

Jan. 19.	Paid draft No. 3	H. McMichael, expense attending Executive Committee meeting	75 00	
" "	Paid draft No. 4	G. M. Carlisle, expense attending Executive Committee meeting	14 35	
" "	Paid draft No. 5	S. G. Greenwood, type-writing	5 95	
" "	" " " "	6 Snow & Farnum, printing	5 50	
Mar. 6.	" " " "	7 Snow & Farnum, printing	2 25	
" "	" " " "	7 Matthews & Northrup, printing	12 27	
Apr. 25.	" " " "	8 Chicago Printing Co., diagrams	16 50	
June 12.	" " " "	9 D. E. Wyand, Electro Plates	46 00	
July 1.	" " " "	10 Wm. R. Brown, rosettes	30 00	
Aug. 13.	" " " "	11 Boston Electric Light Co.	112 50	
" "	" " " "	12 J. M. Appleton, expense	77 10	
" "	" " " "	13 S. G. Greenwood, stenographer	148 54	
" "	" " " "	14 Boston Police Department	43 72	
" "	" " " "	15 George H. Hastings, expense account, as per vouchers	68 50	
" "	" " " "	16 George H. Hastings, expense account, as per vouchers	104 22	
" "	" " " "	17 Mass. Mechanics' Association, rent	675 00	
" "	" " " "	18 Boston <i>Globe</i> and <i>Herald</i> , advertisements	22 80	
" "	" " " "	19 H. McMichael, expense account	152 50	
" "	" " " "	20 G. M. Carlisle, expense account	75 00	
" "	" " " "	21 O. P. Scott, expense account	124 50	
" 15.	" " " "	22 The Scovill & Adams Co.	100 00	
" "	" " " "	23 Matthews, Northup & Co., souvenirs	383 00	
" "	" " " "	24 Tiffany & Co., medals and buttons	1,275 00	
" "	" " " "	25 O. P. Scott, com. account	200 00	
Dec. 2.	" " " "	26 George Murphy, circulars	5 50	
" "	" " " "	27 Matthews, Northup & Co., printing	29 25	
" "	" " " "	28 For partitions	18 67	
" "	" " " "	29 O. P. Scott, balance of commission	274 37	
" "	" " " "	30 G. M. Carlisle, ten per cent. of receipts	474 37	
			<hr/>	
			\$4,742 51	
	Postage	\$9 50		
	Commission paid Sec. Potter (Endean)	2 00		
	Commission paid Treas. Carlisle	2 00		
	Express	3 25		
	Expense to Boston Hall business	4 00		
	Messenger boy	35		
	Telegram	53	21 63	
			<hr/>	
	Total disbursements	\$4,764 14		
	Cash in banks	2,895 37		
			<hr/>	
			\$7,659 51	

RECAPITULATION.

Paid for expense, 1889	\$4,764 14
Cash received, 1889	4,743 78

Expense in excess of receipts \$ 20 36

There is yet due the association \$ 40, which, when paid, will show a gain of \$19.64.

Respectfully submitted,

GEORGE W. CARLISLE, Treasurer.

P. S.—Received after this report was made up from Messrs. E. & H. T. Anthony, for advertisement in Souvenir, \$20.

O. P. SCOTT in account with the Photographers' Association of America.

Aug. 10, 1889. Received from B. French & Co., for space	\$52 00
" " J. A. Knorr, for space	21 25
" " S. Wing, for space	10 00
" " Geo. Heyn	10 00
" " J. A. Schindler	15 00
" " G. Gennert	31 90
" " Acme Burnisher Co.	31 50
" " Eagle Dry Plate Co.	110 25
" " Smith and Pattison	141 75
" " Blair Camera Co	195 50
" " Schwartz	82 50
" " J. C. Sommerville	55 00
" " Scovill & Co.	141 75
" " Stanley Dry Plate Co.	141 75
" " Entrekin Burnisher Co.	121 50
" " Seed Dry Plate Co.	114 00
" " Packard Bros.	114 00
" " Wilson & Hood	36 00
" " Geo. Murphy	36 00
" " White Chair Mfg.	36 00
" " A. M. Collins & Co.	60 00
" " Mr. Schultze	60 00
" " J. Gilbert	13 50
" " Morris Earl & Co.	42 75
" " J. W. Bryant	88 00
" " G. Cramer	82 50
" " Scovill-Adams Co. (adsv. in Souvenir) . .	15 00
" " A. M. Collins " " . .	10 00
" " G. Cramer " " . .	15 00
" " Seed & Co. " " . .	10 00
" " Wilson Hood " " . .	5 00
" " Acme Burnisher Co. " " . .	10 00
" " Gundlach Lens Co. " " . .	10 00
" " Air Brush Co. " " . .	10 00
" " Mr. Knapp	25 00

Aug. 10, 1889.	Received from L. W. Seavey & Co.	60 00
" "	" " Sprague & Hathaway	10 00
		<hr/>
		\$2,024 40

DISBURSEMENTS.

Dec. 28, 1889.	Express on Tin Box from Indianapolis	\$1 40
" "	" " Diplomas from Indianapolis	60
" "	" " Tin Box to Boston	1 25
" "	" " " Chicago	1 25
" "	" " Books to Chicago	65
" "	" " Stationery from Buffalo	75
	Telegram	50
	Stamps	2 00
	Telegrams	1 80
	Stamps	2 00
May 16, 1889.	Telegram	65
" 22, "	" "	60
" 24, "	" "	4 00
	Express on By-Laws to Geo. Murphy	80
	Circular to Dunn & Co.	23 00
	Stamps	1 25
Aug. 12, 1889.	Paid Treasurer	1,127 50
Sept. 3, "	" "	340 75
Dec. 3, "	" "	247 25
" 3, "	" "	264 40
		<hr/>
		\$2,024 40

AN EASY YEAR FOR CORRESPONDENTS.—“Lots of time will be saved by letter writers this year,” said a very busy merchant down town the other day. He had improved a breathing spell in his working hours by scribbling all over a piece of scratch paper the dates 1889 and 1890.

“See here,” he continued, pointing with his pen at the paper, “Do you know that I can write 1890 much faster than 1889, although I have had the advantage of a year’s practice with the latter date? It is only the difference of a fraction of a second, of course, but when you add together those fractions of a second hundreds of thousands of millions of times they go to make up a very respectable period of time—perhaps a century or so in all. We haven’t had such an easy date to write as 1890 since the year 1860. All the dates from 1870 have been awkward for penmen. Try it a few times and see how easily you can put 1890 on a paper. The next week you will wonder why you will persist in writing the awkward 1889, and scratching it out again. But you’ll do it all the same.”—*N. Y. Sun.*

**INFLUENCE OF THE PROCESS OF COOLING UPON THE OPTICAL
PROPERTIES OF GLASS AND THE PRODUCTION OF PRESSED
LENSES IN A THOROUGHLY ANNEALED STATE.**

Communication from the Glastechnisches Laboratorium, Schott & Gen., in Jena.

THE very imperfect state of annealing generally met with in the glass-discs for larger telescopes formed for many years past a constant source of complaint of such opticians who, in the manufacture of large-sized lenses, are working strictly spherical surfaces. For this and other reasons, it has been our aim ever since the erection of our works to improve on the process of annealing. The method hitherto in use, viz. : that of allowing the temperature of the red-hot glass to fall in a kiln completely enclosed by brick-work, which gradually transmits the heat stored up in it to the surrounding atmosphere, has been discontinued by us in all such cases, where high optical properties are aimed at, and in its place we adopted the plan of storing the glass in a vessel the temperature of which may be accurately measured and subjected to a very slow and strictly uniform decrease, the duration of which may be adjusted to suit special requirements.

The experimental researches which formed the necessary predecessors of our new process of annealing, offered ample opportunity for minutely studying the influence of internal strains and pressures upon the optical properties of the glass. We intend to treat in extenso on this subject at a later date ; here it may suffice to mention the most important of those results which will interest practical opticians.

1. Any kind of glass becomes strained, *i.e.*, the molecules of the glass are subjected to tension, unless the process of solidification be extended over a very long period.

2. The refractive index of one and the same piece of the glass varies according to the duration of the process of annealing ; this diversity may extend to several units of the third decimal place.

3. If a lens or circular disc on being carefully examined by means of polarised light be found to yield a regular black cross, which remains perfectly free from any distortion during a complete rotation of the disc about the optic axis, it may be inferred that the tension is strictly regular throughout the entire piece of glass under examination. The presence of a moderate tension of this kind has no other effect as if there were a slight gradual diminution of the refractive index in the direction of the axis. Owing to the symmetrical arrangement of the tensions round the axis, they do not exercise any detrimental influence on the image.

4. If, however, a lens or circular disc, while being turned round its axis under examination in polarised light, show in any one or several positions a displaced black cross or any other irregular figure, the tension must be considered to be irregular. The influence of such tensions dissymmetrically grouped round the axis is identical to that of a difference of the refractive power in different parts of the lens. Glasses of this kind should never be employed for the manufacture of large-sized objectives. With telescopic lenses made of glass where this defect existed in a moderate degree,

many opticians attempt to compensate this differentiation of refraction by introducing at random deviations from strictly spherical surfaces through polishing, with the result of thus obtaining pretty satisfactory images.

By means of our method of annealing we have succeeded in producing discs for object-lenses having a diameter up to 35 cm. nearly perfectly free from tension. The entire surface of the disc being made to become efficient under the polaroscope. All that is necessary during the test is to exclude any differences of temperature of the discs, as these are apt to give rise to temporary tensions. Nearly all discs annealed according to the older system show the distinct black crosses characterizing the presence of strain and pressure, even in those cases where the diameter of the discs does not exceed 2 cm.

Though it must be admitted that many opticians, before grinding large-sized lenses for telescopes, will ascertain the properties of the glass with respect to annealing, yet we know from experience that there is considerable inclination to underrate the serious effects of tension, and that many go so far as to consider examination before or after making a lens, hardly worth the trouble.

We append to these lines a sketch of an apparatus, the principle of which is due to Prof. Mach, of Prag, which may be readily put up and by means of which plane plates (Fig. 2) or positive lenses (Fig. 1) may be tested. The apparatus must be adjusted in such a manner that with parallel Nicol prisms the eye at *E* sees the lens or disc to be tested fully illuminated; if now the Nicol prisms be crossed, total extinction will take place with glasses having no internal tensions, whereas with imperfectly annealed glasses the well known figures indicative of tension will present themselves.

In order to examine the figures due to strain or pressure in all positions of the prism with respect of the disc of glass, it will be found advantageous to turn both prisms synchronically rather than to turn the discs themselves, as these owing to the touch of the warm hand may become locally heated.

In order to better distinguish the present new method of annealing from that hitherto in use—raw annealing,—we have introduced the term "fine annealing" when referring to the former.

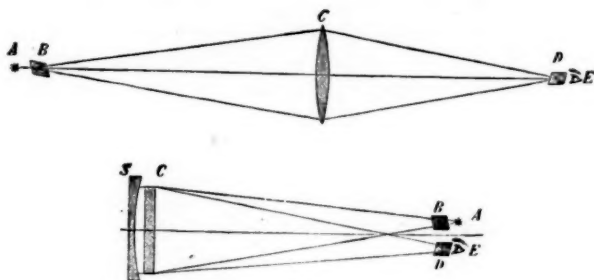
PRESSED GLASS.

Our experiments and improvements made with regard to the process of glass-annealing, have induced us to adopt for our fabrication the well known plan, worked in Paris since many years, of moulding the glass by means of pressing it while in a semi-liquid state between metal cups having as nearly as possible the same curvatures as the lens. Lenses produced in this manner are utterly useless for application in better class instruments if the ordinary quick process of annealing be employed, as the internal strain in the glass will generally be very great and sometimes may become so excessive as to cause the rough lens to fly into small pieces as soon as an attempt is made to grind it. However, with our new method of annealing, which permits of annealing at such low temperatures as to put deformations out of the question, ready means are furnished to produce lenses of this kind entirely free from internal strains by subjecting them, after having allowed them to cool down, to a second process of annealing in the above mentioned apparatus.

Wishing to remove a prejudice held by many opticians, we will not omit to distinctly state that the pressure exerted on the glass while in a semi-liquid state is by

no means the cause of internal strain or pressure; on the contrary, the only source of these must be looked for in the accelerated process of chilling, which has to be made use of in order to prevent deformation.

The favorable practical results obtained by many opticians with glass prepared in this manner encourage us to recommend its application for all such cases where large numbers of lenses of the same kind have to be made with various curvatures and diameters within the limits between 12 to 120 mm. The increased costs of glass prepared in this manner are amply compensated for by the saving of material and work. Lenses having the exact form of the desired lenses suffice as patterns. On account of the prolonged period of annealing we require as a rule a term for delivery from 6 to 8 weeks. We are prepared to submit sample lenses to our customers.



- A* Illuminating source (bright-burning petroleum flame).
- B* Polarising Nicol prism.
- C* Lens or disc to be tested.
- D* Analysing prism.
- E* The observer's eye.
- S* Concave mirror.

In Fig. 1 *A* and *B* are conjugative points with respect to the lens *C*; in fig. 2 both points are situated in the plane of the centre of curvature of the mirror *S*.

Jena, December 1889.

MOST of the leading manufacturers of photographic lenses have of late put new lenses on the market, for which they claim special excellence as to the results obtained. The advantages of these lenses are due to the new optical glass, now manufactured at Jena, in which boric acid, to a greater or less extent, replaces silicic acid. It is to the properties of this glass more than to any new method of construction that these lenses owe their excellence.

**ON A GENERAL METHOD OF TONING PHOTOGRAPHIC SILVER
PRINTS WITH PLATINUM AND METALS OF THE
PLATINUM GROUP.**

BY PIERRE MERCIER.

Comptes Rendus (109) 949.

THE attempts heretofore made to tone silver prints with platinum have not yielded satisfactory results. In solutions of platinic chloride the silver image rapidly becomes pale and disappears, for the silver is converted into chloride, and is not replaced by platinum, that metal being simply reduced to platinous chloride. But if a solution of platinous chloride be employed, and, contrary to the requirements of a gold toning bath, this bath be rendered acid with mineral or vegetable acid, the silver prints immersed in it quickly acquire a black tone, passing through intermediate shades of an agreeable purple. Two atoms of silver are then replaced by one of platinum.

Palladium, iridium and osmium, under the same conditions as the platinum, furnish characteristic tones, and the general method of preparation of the baths appears to be based on the principle that toning by metals of the platinum group must be conducted in acid baths and the metal must be in the lowest form of combination.

Platinum toning.—The soluble and very stable chloroplatinites make excellent toning baths. Any of the alkaline chloroplatinites can be employed, the following formula serving as a type.

Potassium chloroplatinites	1
Sulphuric acid	5
Water	1000

The sulphuric acid may be replaced by hydrochloric acid but since the latter renders the chloroplatinites more stable, its quantity should not be greater than three in one thousand, or by organic acids, excepting such as formic, tartaric, or oxalic, which exert a reducing action on the platinum salt especially under the influence of light.

The toning bath may be prepared directly from platinic chloride by boiling it in the light with an appropriate reducing agent in the exact quantity required to reduce the salt to the platinous condition.

An excellent toning bath may be thus prepared by boiling in a glass flask a mixture of two grammes platinic chloride in solution, with one gramme sodium neutral tartrate, until the yellow liquid assumes a dull gray color, then making up the solution to one litre, and adding the proper quantity of acid.

Ruthinium and Osmium.—I have not succeeded in obtaining with ruthinium and osmium other tones than yellow, differing but little from the untuned prints.

Palladium.—A solution containing one gramme iodine chloride, two grammes palladious chloride, and two hundred grammes acetic acid to the litre of water rapidly blackens silver tones, but the paper takes a yellow tint which even after bleaching by five per cent. ammonia water, reappears more or less rapidly after fixing, and destroys the value of the prints.

Iridium.—The iridium tone resembles that of gold. The bath may be prepared by dissolving one or two grammes of iridium and platinum double chloride in one litre of water, and acidifying as with platinum. Silver prints tone slowly in this bath, but the whites remain pure, and handsome soft violet tones are obtained.

Osmium.—This metal gives tones quite characteristic. The bath may be made by dissolving one or two grammes of ammonium chlorosmiate and twenty grammes acetic acid in a litre of water. Prints immersed in this bath take first a sienna brown tint; this color becomes modified first in the half-tones of the image, and changes to a more or less intense sky blue which affects the whole print. If, instead of allowing the prints to become blue, they are withdrawn from the bath as soon as the blue begins to appear in the whites, a very common result is obtained after the fixing. Besides the whites of the photographs, two tones are present; a light brown in the deep shadows, and a blue in the half-tones. With mineral acids the final tone obtained by the use of osmium is not blue but violet, and this tint appears even in the whites of the print.

W. H. GREEN.

THE ELECTRIC CANDLE CURE.—A subscriber at Bryan, Ohio, recently sent the *Electrical World* the following dialogue, which he overheard in the street:

"Howdy do, howdy do?"

"Oh, fair to middlin'; folks all well, but I have got a touch of rheumatiz."

"Oh, you can get rid of that; I had it so bad I couldn't raise my hand to take a chaw of terbacker, but it's gone now."

"What did you take for it?"

"Waal, when they put up them 'lectric lights, I got one of their candles they had dropped, and carry it in my pocket. You know 'lectricity is good for medicine. Waal, there is 'nough 'lectricity left in the candles when they put them out that some will soak inter you, and that knocks it every time. Jest try it."

"I will; where can I get one?"

"I've got a couple; take one."

"Much obliged; I'll give it a chance."

LIVES of poor men oft remind us honest toil don't stand a chance; more we work we leave behind us bigger patches on our pants. On our pants once new and glossy now are patches of different hue; *all because subscribers linger and won't pay up what is due*. Then let all be up and doing; send in your mite be it so small, or when the snows of winter strike us we shall have no pants at all.—*Exchange*.

TESTING THE RAPIDITY OF PHOTOGRAPHIC PLATES.

AT the November meeting of the Leeds Photographic Society, Mr. F. W. Branson delivered a lecture on "Some Recent Advances in Photography," in the course of which he gave the following interesting account of the latest method of testing photographic plates, viz. :—

The first instrument I shall bring before your notice is the lamp adopted by the International Photographic Congress for testing plates. An earlier form of acetate of amyl lamp was proposed by Siemens, but this has, in my opinion, been much improved by the suggestions of Mr. C. H. Bothamley, who places a screen with an aperture of a standard size on either side of the flame. Siemens' method was to obtain a flame of a definite height with a wick of standard dimensions, but this method is not perfectly satisfactory. The size of the aperture proposed by the Congress is one-fifth square centimetre, but Mr. Bothamley prefers for testing orthochromatic plates an aperture of one-half square centimetre. The exhibited has both these apertures.

Should the odor of the amyl acetate be objected to, the lamp can be placed under a ventilating hood in the dark room.

The following method which I have suggested for testing the rapidity of photographic plates with the above lamp is extremely simple, and is correct within a small percentage of error.

A standard candle can be used as the source of light, or in place of one candle, two candles at a greater acting distance may be substituted to compensate for the small variations to which a small candle is liable. Preference is, however, given to the standard lamp before mentioned.

The sensitometer required may be easily made as follows :

A $\frac{1}{4}$ plate or other printing frame is ruled with four ink lines, so as to divide the clear opening of the aperture in the direction of its narrowest diameter into five equal spaces ; number the upper division on the printing frame 1 to 5, and the lower 6 to 10. In order to give a graduated series of exposures, take a thin sheet of metal or a piece of cardboard, at least twice the length of the plate to be tested, and remove a portion sufficient to expose the upper half of the plate ; one portion of this screen will now cover the whole of the plate, and the cut away portion the lower half only of the plate. It is therefore obvious that by moving the screen forward (at a distance of one metre from the lamp) one ruled division every five seconds, that ten exposures of a definite duration may be given to consecutive areas of the plate. A metronome, beating seconds, may be used to indicate periods of time. The plate is then developed with a standard developer, and the density compared with a standard tint. *The (London) Camera.*

A WOMAN'S VIEW OF THE ART THAT CAN IMMORTALIZE.

MY unfortunate husband was stricken with the amateur photographic plague about two years ago. Up to that time I always considered him reasonably sane. Although at my request he has quit smoking, he positively refuses to give up his photographic habit. At the time he began this so-called recreation our home was one of the neatest in the neighborhood,—you ought to see it now! The carpets have been ruined with those horrid chemicals. The bath-room is something frightful to behold! He uses it for his dark room. One of the photographic books that he has, and there is no end of them, states that Daguerre was the inventor of photography, but I think it must have been a sulphurous gentleman with the same initial who was the inventor of amateur photography. My husband was reasonably good-tempered before he took up your diabolical art. I one time opened the door of the room in which he was working; it was all dark except a dull red lamp, which gave a fearful weird look to the whole room. The moment I opened the door and let in some light he went perfectly crazy. He claimed I spoiled all his plates, just as if in those few moments anything could be ruined, when I had absolutely touched nothing. I came near applying for a divorce because of his awful remarks. If the evil one was not the inventor of amateur photography, then I would like to know who was. Then the pictures he does turn out, when he gets them finished, are perfectly awful. He has tried at different times to photograph the children; but the poor little dears look like wooden images. I went into the bath-room once with the baby, and put him in the bath-tub. There was some nice clear water there already; but he had some of that horrible solution of silver in it. That turned the baby jet black, and we haven't been able to get the color off him to this day.

Then the cost of the thing is something frightful, although my husband carefully conceals what he spends on it. I came across one of the stock dealer's bills the other day, and it was enough to make one's hair stand on end. Pyrogallic acid whatever that may be, was 35 cts. an ounce. Just to think of it, if we had to pay that price for sugar,—\$5.60 a pound instead of 10 cts. ! And that wasn't the worst of it. What do you think of his charge for chloride of aurum, 60 cts. for 15 grains. As you know, that is about \$20 an ounce, and \$20 an ounce is over \$300 a pound. I not know how much of this stuff he uses every week, but if it is only ten pounds of it every week (and I'm sure ten pounds of sugar don't go very far in a family like ours), you will see that it is \$3000 for that one thing alone, not to mention the dozens of other chemicals he uses, and I don't know what the price of them is. I tell you that amateur photography was intended to drive a poor woman crazy who has a husband that is a victim to the villainous practice. No wonder he says he can't afford a new dress for me when I ask him for it. I'm always afraid to sweep in any part of the house for fear it will raise a dust that will spoil something that he tacked up on the wall to dry. I wouldn't mind all this so much if he ever took a picture worth looking at.—MRS. CAMERA TRIPOD, in *Detroit Free Press*.

THE AMATEUR PHOTOGRAPHER ON THE WITNESS STAND.

IN a case lately tried in one of the Pennsylvania courts, the following circumstance occurred, which, as will be seen, resulted in the discomfiture of the learned counsel. The issue was a railroad case where damages were claimed for personal injuries, received, it was claimed, by the shortness of the stop, and the case hinged upon the time the train remained motionless at the station. On this subject there was a wide diversity of opinion in the evidence. On the part of the plaintiff it was endeavored to show that the stop was only from eight to ten seconds, or even less time; while on part of the defence it was stated that the actual time which elapsed was from forty-five to sixty seconds. During the progress of the case several passengers of the train were called by the railroad company. One of these witnesses, a young man of the meek, quiet sort, such as are met with almost every day in the usual walks of life, affirmed that the stop on that occasion was exactly forty-three seconds. This was apparently too good a chance for the opposing attorney to let pass, and, considering the inoffensive appearance of his victim, he expected to score a strong point for his client by tangling him up on cross-examination. When the direct testimony was finished, the lawyer, bracing himself back, and with a frown and stern voice said:

"You have sworn that the exact time of the stop was forty-three seconds—no more, and no less. Do you want that to go to this jury as your evidence?"

Ans. Yes sir.

Ques. Did you use your watch to determine the exact time?

Ans. No sir.

Ques. Now, sir, you are on your oath; now state how you know that the stop in question was not forty-two or forty-four seconds?

Ans. Because I am positive it was forty-three.

Ques. Now, sir, will you explain to the Court and jury how you make this ridiculous statement of setting the exact second, without having looked at your watch?

Ans. Yes sir, very easily. I am a member of the Leopardville Camera Club, and was practicing the counting of seconds at the different stops along the road that day, comparing my count with my watch. Was doing this for the purpose of timing exposures. At the station in question I counted the seconds, but did not look at my watch, and I am willing to affirm that I am not two seconds out, or I am willing to submit to a time test here on the stand.

The offer was not accepted. The learned counsel did not know that it was loaded.

MORAL.—Before you attempt to tangle a witness up on time, be sure that he is not an amateur photographer.

S.

THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.

A STATED meeting was held Wednesday evening, February 5, 1890, with the President, Mr. Frederic Graff, in the chair.

Communications were received from Messrs. E. & H. T. Athony & Co., presenting a bound volume of Anthony's *Bulletin* for 1889; from Edward L. Wilson, presenting a copy of "Photographic Mosaics" for 1890, and from Louis Reichner, Jr., presenting a gavel stone for use by the society. A vote of thanks was tendered in each case.

The Secretary announced that an International Photographic Exhibition would be held at Newcastle-on-Tyne, England, from April 23d to May 3d, by the New Castle and Northern Counties Photographic Association. As this association had been particularly well represented at the various exhibitions in which the Photographic Society of Philadelphia was interested, he expressed the hope that members would show their appreciation of this fact by sending a goodly number of fine exhibits.

The Committee on Lantern Slides reported that the Interchange lantern slides shown at the conversational meeting were those of the Cincinnati Camera Club, and in addition, slides were shown by Dr. Mitchell, Dr. Reed, and other members. The committee, in accordance with the directions contained in a resolution adopted at the last meeting, had made preliminary arrangements for a public lantern exhibition at Association Hall, Wednesday evening, March 12th.

The Committee on Membership reported the election to Active membership of Messrs. William C. Stevenson, Jr. and Joseph C. Roop.

A paper was read by Dr. Charles L. Mitchell, on "The Silver Printing Bath."

Mr. Browne said that in listening to the very interesting paper, his mind reverted to many years ago when he had a good deal of trouble with the discoloration of the silver bath, and he mentioned one point that occurred to him. He had found after many trials a process of preparing the silver bath which obviated all difficulty from discoloration. He had been using it since 1863, and it was yet as clear as crystal. It was made originally of seventy grains of nitrate of silver to each ounce of water. To every quart of silver solution, a half ounce of concentrated ammonia was added, which, of course, made a precipitate that was cleared up with solution of nitrate of ammonia; then an ounce of alcohol was added to a quart of silver solution. It seemed odd to put in so much organic matter as an ounce of alcohol, but the bath never discolored.

Dr. Mitchell referred to a process he had tried in treating a bath that had become discolored, and in which he used a solution of caustic potassium. Warmth had caused an explosion.

Dr. Wallace, as an old pupil of Mr. Browne, said he had worked on the same idea as Mr. Browne described, making a slight departure. He had used sixty grains, afterward reduced to fifty, increasing the alcohol to 10 per cent. of the total bulk, and making an addition of alum as recommended by Mr. Anthony, of New York. It had never discolored unless exposed to light immediately after paper had been floated upon it. The solution was always in order.

In reply to a question of Dr. Mitchell as to the evaporation of the alcohol, Mr. Wallace said that when the bulk became reduced, alcohol was added.

Mr. McCollin exhibited a little instrument called Decoudun's photometer, or to coin a name, an "exposometer." He described it as an apparatus for ascertaining the amount of exposure necessary in any subject. Through an oblong opening would be seen four holes—one larger and three smaller. After the picture had been focused on the ground glass the instrument was placed against the latter, turning the button at the back, looking through the oblong hole and watching the three smaller holes as the light disappeared. Then taking the instrument away and reversing, and looking through another round hole a letter would be found. This letter corresponded to a table which would give the time of exposure necessary on that particular view or subject.

Mr. Burrows had used the instrument, but not sufficiently to speak in regard to it. It could be used also in testing the light-giving capacity of different lenses.

Mr. Pancoast related an experience in making lantern slides. During warm weather he had been quite successful, but on the coming of cold weather he found it was impossible to get anything but a dull green tone or black gray without any life to the slide. Upon investigation he found this was due to the temperature; by warming the developer a little he increased the warmth of tone. If the developing solution was below 60 degrees the results were bad, but at 60 to 65 satisfactory results were obtained.

Mr. Pancoast passed around slides and asked the nature of the deposit on the cover glass. The sky of the slide was covered with a crystalline deposit. The slides were made by Mr. Rau two years ago by the wet process, and were mounted in the usual way. They were stored in a pine box without being separated.

Mr. Coates said this occurred in ten per cent. of slides, and would all rub off. It was in the covering glass.

Mr. Rau had a box of slides made one and a half or two years ago, and on opening the paste board box in which they were, he found them covered with the same sort of deposit. They had been made on a fine quality of French glass.

Mr. Bell said that the cover glasses of daguerreotypes were affected in a similar manner. The mercury with which the pictures were developed he thought afterwards evaporated and formed the deposit. If mercury had been used in any form on the slides this would perhaps account for it.

Mr. Rau said mercury had not been used.

Mr. Burrows suggested that slides be submitted for careful examination, microscopic or otherwise.

Mr. Suplee thought the deposit might be organic, and come from the gum or paste around the edges.

Mr. Pancoast thought it must be in the subsequent treatment of the slide after development.

Mr. Coates referred to metal bound slides that were being brought out in England.

Mr. Carbutt thought the remedy would be to coat the slide itself with collodion, and the glass too, before putting them together. The moisture that gets between the plates had a good deal to do with the trouble, he thought.

Mr. Wallace asked if oil or glycerine would not answer the same purpose as colodion.

Mr. Carbutt said he would not advise the use of glycerine, as it might get into globules.

Mr. Rau asked if Mr. Carbutt did not think it was in the glass itself,

Mr. Carbutt thought that the chemical composition of the glass might have something to do with it.

Mr. Earle asked what would be the effect of using Canada balsam between the glasses, as it hardened and made a good medium for light to pass through.

Mr. Carbutt thought that would be a preventive.

Mr. Bell said balsam would necessitate the use of plate glass.

Mr. Coates found as lenses grew old they split apart, either by the balsam drying and becoming too thin to fill the space, or by some warping action,—perhaps the contraction of the glass,—requiring them to be taken apart and re-balsamed. This would ruin the lantern slide.

Mr. Rau had a Ross portable symmetrical lens that had the same defect, and thought it must be in the nature of the glass.

Mr. Pancoast mentioned in that connection that lenses in India were particularly susceptible to the fungous growth, and only remained in condition a few years—due to the damp weather between December and April. It was a matter of heat and moisture.

Mr. Suplee thought it might be organic.

Mr. Cheyney thought that one of the slides showed decidedly inorganic matter that had taken the form of crystallization.

Dr. Mitchell said an article in a photographic paper he had read ascribed it to chemical action, the glass being actually etched.

Mr. Wilson had noticed the same defect in old opera glasses.

Mr. Coates moved that the subject be referred to the Executive Committee for further investigation. Carried.

Dr. Mitchell referred to an article by Capt. Abney in one of the recent journals, in which he stated that on trying a color screen tinted with turmeric on some mountain views in Switzerland, in connection with ordinary plates, he found no advantage in the use of the screen. On repeating the experiment with a screen colored with aurine, however, and increasing the exposure thirty times, very satisfactory results were obtained.

Mr. Bell thought turmeric was adapted to the work with orthochromatic plates, and was as good as anything.

Mr. Carbutt said aurine was very much better under certain circumstances where the color must be held down while exposing for greens or browns, or reddish browns. A very strong color could not be gotten from turmeric.

Mr. McCollin had had occasion to copy a painting, and had made a color screen, using it in place of a stop. He had used picric acid. The stop itself was made of thin glass.

Mr. Carbutt said that while taking some views during a visit to the Lotus Club gardens at Bordentown he became convinced that the proper place for the color screen was between the lenses.

Mr. Bell spoke of his experience in orthochromatic photography. He commenced by putting the color-glass in the diaphragm slot, taking thin mica and coating it with collodion. He had found no material difference when putting in either at the front or back, but thought it much more convenient to put it in the back.

Mr. McCollin had treated a piece of mica, but found it altered the focus. It was thicker, however, than that used by Mr. Bell.

Mr. Bell thought it might be a question of eyesight.

Mr. Rau had used a piece of light orange glass, but could not get sharp focus with it.

Mr. Redfield had a box made with a groove back of the lens, in which he could slip the color screen, and when out in the field used it or not, as convenient.

Mr. Pancoast asked whether in using the back combination of a Ross Portable Symmetrical Lens as a single lens the stop was in the right position. A writer in one of the recent journals had said that in using a lens in this manner the stop should be moved forward so as to be one-fifth or one-sixth the focal length of the lens in front of the glass. In the portable symmetrical lens, if the stop was changed to this position, it would seem as if the light would only be admitted to the plate in almost parallel rays, so that only three or four inches square would be covered.

Mr. Redfield mentioned that Mr. J. G. Bullock had used quite extensively a 6 inch Ross Portable Lens as a single lens on a $6\frac{1}{2} \times 8\frac{1}{2}$ plate, and had made some of his finest landscape work in this manner.

Mr. Carbutt suggested the use of an adapter to change the position of the stop about $\frac{1}{2}$ inch forward.

Mr. Bell had endeavored, in 1876, to get a lens of 40 in. focus to photograph the Centennial Buildings, etc., for Mr. Gutekunst, but, failing to find one, had used the back combination of a 21 in. Ross Portable Lens, the stop remaining in its normal position. As the temporary camera used allowed no adjustment for focus, the plate was fixed at 42 in. from the lens by measurement only, and the result was a perfect success.

Adjourned,

ROBERT S. REDFIELD, *Secretary*.

POMPOUS PARTY.—"So you are the exchange editor, young man. Nautically speaking, you are a clipper?"

SEARNELL.—"No. Inasmuch as I ply the scissors for a living, I am a revenue cutter."

Here lies the body of Moses Draper
(Tread softly ye who pass),
Who lived till sixty without a paper,
And then blew out the gas.

DETROIT AMATEUR PHOTOGRAPHIC SOCIETY.

A SPECIAL meeting of the Detroit Amateur Photographic Society was held in the parlors of the Club, Friday evening, January 24th, for the purpose of meeting Mr. C. A. Stacey, representing the Eastman Company of Rochester, N. Y. The fore part of the evening was spent in examining Mr. Stacey's exhibit, after which a flash-light exposure was made of the members of the club; the negatives were then developed and passed around among the members. The transparent films were pronounced the thing for future use. The demonstrator used pyro, while some of the members used eikonogen, both with fine results; the negatives were made with the new Kodaks—all sizes up to 5 x 7—of which Mr. S. had samples.

Just before the club adjourned they were presented with views $6\frac{1}{2} \times 8\frac{1}{2}$, made by Mr. Stacey on his previous visit to this city. After a vote of thanks the club adjourned.

J. E. LOCKWOOD, *Secretary*.

THE BOSTON CAMERA CLUB.

THE annual meeting of the Club was held at the rooms, Monday evening, January 6th. The following officers for 1890 were elected: President, Henry N. Sweet; Vice-President, Francis Blake; Secretary, Edward P. Wilder; Treasurer, William Garrison Reed; Librarian, John C. Lee. Executive Committee: F. Alcott Pratt, C. E. Davis, Jr., S. Henry Hooper.

The resignations of ten members were read and accepted, and the vacancies immediately filled from the waiting list by the election of the following: David W. Lewis, Adolf. Lomb, J. M. Bassett, Thos. W. Babcock, Edmund B. Garfield, Sylvester Baxter, A. Lincoln Filene, R. S. Stearns, O. A. Eames.

The Treasurer's report showed a gratifying state of the finances of the Club, and upon his recommendation it was voted to pay the remainder of the Club's floating debt from the income of the current year.

In response to an invitation from a committee in charge of the matter an informal exhibition of the work of members was displayed upon the walls.

Although not quite as extensive as the exhibition of a year ago, it was very creditable and contained much that was fine. A large proportion of bromides was noticeable, some contact prints by this process by C. E. Hubbard being noticeable for softness, yet full of detail.

The prize (a year's subscription to a photographic journal), was awarded by ballot to John C. Lee, for his study of a "Boy with Violin." Next in order of merit was Mr. Frizzell's "Village Blacksmith," in bromide, and Mr. Means' "Unloading Sea-weed," in albumen silver.

At the close of the meeting the company partook of a collation which the Committee on Entertainment had provided in the studio.

E. F. WILDER, *Secretary*.

LITERARY AND BUSINESS NOTES.

A MINNEAPOLIS judge has just decided that a photographer has no right to allow anyone but the person who is sitting for a picture to take photographs from his gallery. The case came up owing to a photographer allowing a detective to obtain a picture of a lady from his studio.

AMONG the camera sharps of Lowell are Editor Bayles and Reporter Myers of the *Citizen*. They have interesting collections, and take great pleasure in making additions to their stock. Mr. Bayles has the detective style of camera, and he has the portraits of a number of local gentlemen in funny positions. Reporter Myers has just returned from a European tour on foot, where he secured the grip in three different languages and about 350 fine pictures, taking in all sorts of men and things. He lugged his camera on his back from the Coliseum to the London bridge.

THE Photographic Times Pub. Co. have sent us a finely bound volume of *The Photographic Times* for 1889. On looking over its pages we are reminded again that our contemporary is high up in photographic literature. May their subscription list double the present year; they are worthy of it.

THE WHITE MOUNTAINS.—Two years ago the Boston Camera Club withdrew from the American Lantern Slide Interchange, desiring to concentrate the efforts of its working members upon "Illustrated Descriptions" of cities or localities.

In February, 1889, "Boston" was given to the public, and ever since then two complete sets, one in England and one in the United States, have been in active circulation among the Amateur Photographic Societies. The reception accorded to "Boston" encouraged the members to undertake another subject, and they for several months have been engaged in preparing "A Tour of the White Mountains." It will be ready to start on its travels by the first of March,

and will be freely loaned to any Amateur Photographic Society desiring to give a public entertainment.

Applications should be addressed to Wm. Garrison Reed, Treasurer, 25 Kilby St., Boston, Mass.

"GLIMPSES OF CALIFORNIA."—The Pacific Coast Amateur Photographic Association of San Francisco have recently completed an illustrated lecture with the above title for circulation among the Amateur Photographic Societies, especially those who are engaged in a similar work respecting their own localities.

The Eastern circuit is in the hands of the Boston Camera Club, and any society that desires to use the lecture and slides in entertaining their friends, may apply to William Garrison Reed, Treasurer, 25 Kilby St., Boston, Mass.

912 ARCH ST., Philadelphia, Pa.

January 29, 1890.

THE EASTMAN COMPANY,

GENTLEMEN:—The Silver Cup as prize for Bromide enlargements, entered for competition at the Boston Convention, duly received, and is pronounced by all our friends "a beauty."

Please accept our thanks for what we consider an evidence of your good will, as much as of your sense of justice.

We fully understand that the Eastman Company were in no wise responsible for the equitable disposal of the Prize cup after its having been placed in the hands of the officers of the P. A. of A. for award for the best work, and its having been given to another party contrary to the vote and protest of the judges appointed at the convention was, of course, no fault of yours.

Hence we consider that in making good the award of the judges by sending us this "Special Cup," you are evincing to the Photographic Fraternity as well as to us, a spirit of generosity as well as a strong desire for fair play in convention awards.

Yours respectfully,

ROTHENGATTER & DILLON.

THE PHOTOGRAPHIC TIMES ANNUAL FOR 1890.—The volume for this year contains a more than usually valuable and practical set of short articles on the different branches of photography. Our old friend, Mr. W. J. Stillman, heads the list of contributors with a paper on Architectural Photography. We also observe the name of several of our well-known photographers in Philadelphia. The miscellaneous bits of information of which the almanac proper consists are very full and complete.

THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC FOR 1890.—This standard and very acceptable volume appears this year in its well-known cover, whose plainness rather belies the attractive contents of the inside. The articles are, as usual, very varied in character, and the book is enlivened by several cuts and illustrations, among which the one of Colinton Dell, near Edinburgh, is not only a beautiful picture, but a fine specimen of the photo-mezzotype process.



FEBRUARY BARGAIN LIST.

Colored Lantern Slides, mostly foreign,
\$1.00 each.

80—Lantern Slides of California, Yosemite
Valley, big trees, etc., 20 cents each.

Accessories:

1—7x10 Glass Bath	\$1 00
1—Universal Finder	1 25
1—Wood Drop Shutter	1 25
1—Telescopic Tripod, for 8x10 camera	2 00
1—Calcium Light Sciopticon	25 00
1—Fairy Tripod	3 00
1—Carbutt's Multum in parvo Lantern	4 00
1—15-in. Oscillating Burnisher,	10 00
1—6-in. Eureka Burnisher,	8 00
1—Bromide Easel, with Kits up to 25x30	10 00
1—Haworth's Patent Camera Stand, for 8x10	6 00
1—Walmsley Reversible Finder	2 50
1—9x11 Glass Bath and Dipper	1 80
1—Packard Rock	3 00
1—8x11 Exterior Background, light right	8 00
1—Card size Burnisher	3 00
1—Cameo Press	1 00
1—Rustic Wood Chair	4 00
1 copy Photo Mosaics for 1881, in cloth	50
1 copy Photo Colorists' Guide,	75
1 copy About Photography and Photographers	50
British Journal Almanacs for 1889, reduced to	30
1—15-in Entreklin Eureka Bur- nisher	15 00
1—Fuming Box	4 00
1—15x18 Deep Porcelain Tray	3 00
1—15x18 Japan Tray	50
1—Iron Centre Camera Stand,	3 00
1—Seavey Swiss Cottage Acces- sory	12 00
1—8x10 Exterior Ground, good condition,	10 00
British Journal Almanacs for 1878,	20
Photo Mosaics for 1883,	20
1—8x10 Osborne's interior back- ground, new, light left	20 00
1—4x8 Osborne's side slip	7 50
Pearl leads, the best retouching point in the market, each	15
5x8 Woodbury Dry Plates, PER DOZ.	80
5x8 Neidhardt "	65
4x5 Bridle "	35

1—8x10 Hough's Exterior ground, good as new, light left of sitter	\$9 00
1—8x10 Hough's Exterior ground, light right	8 00
1—Hough's Oak Stump	7 50
1—Osborne's Bridge Accessory	8 00
1—Osborne's Gate Combination Accessory, new	18 00
1—6x6 Children's Fancy Ground	3 00
1—15 inch Smith & Pattison, Qua- druplex Enameler,	25 00

Camera Boxes:

1—8x10 N. P. A. Camera, single swing	12 00
2—8x10 Novel Holders, each	2 50
1—5x8 Tourist Camera, plate holder, tripod, case, and No. 2 Darlot Rapid Hemispheri- cal Lens	27 00
1—4x5 "Midget" Pocket Camera, tripod and 6 holders	18 00
1—8x10 American Optical Co.'s Portrait Camera, double swing	16 00
1—4x5 Flammang revolving back Camera, lens and tripod, new; reduced from \$37 to	25 00
1—17x20 American Optical Co.'s Double Swing Portrait Cam- era, Bonanza Holder, good as new	75 00
1—5x8 Blair View Camera, single swing	17 00
1—Climax Outfit, including chemi- cals, complete	3 50
1—17x20 D. S. View Camera, good condition	40 00
1—5x8 Tourist Outfit, including 5x8 Tourist Camera Box, 2 Daisy Plate Holders, 1 Extension Tripod and 1 Canvas Carrying Case, very little used. Price, new, \$40.50, will sell for	30 00
1—10x12 Cone View Camera, Double Swing, new	52 80
1—5x8 Wet Plate Stereo Camera, 3 holders, case and tripod	25 00
1—6½x8½ View Camera and Lens,	12 00
1—6½x8½ American Optical Co. first qual. View Camera	23 00
1—4¼x5½ Ex. qual. Portrait Camera	17 50
1—5x8 American Optical Co. Stereo Camera	25 00
1—5x8 Blair Compact Camera, good as new	35 00